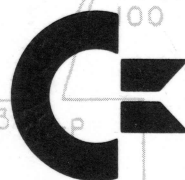


DECEMBER, 1985  
PART NO. — 314001-05

SX 64

PORTABLE COMPUTER

— SCHEMATICS —

 **commodore**

**SX 64**

**PORTABLE COMPUTER**

**— SCHEMATICS —**

**Commodore Business Machines, Inc.**

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# CONTENTS

| Title                 | Page |
|-----------------------|------|
| INTRODUCTION .....    | 1    |
| ASSEMBLY PARTS .....  | 1    |
| BLOCK DIAGRAM .....   | 2    |
| <u>CPU</u>            |      |
| PCB LAYOUT .....      | 3    |
| PARTS LIST .....      | 4    |
| SCHEMATIC .....       | 6    |
| <u>FDD</u>            |      |
| PCB LAYOUT .....      | 7    |
| PARTS LIST .....      | 8    |
| SCHEMATIC .....       | 10   |
| <u>I/O</u>            |      |
| PCB LAYOUT .....      | 11   |
| PARTS LIST .....      | 12   |
| SCHEMATIC .....       | 13   |
| <u>EXPANSION</u>      |      |
| PCB LAYOUT .....      | 14   |
| SCHEMATIC .....       | 15   |
| <u>MONITOR</u>        |      |
| PCB LAYOUT .....      | 16   |
| PARTS LIST .....      | 17   |
| SCHEMATIC — 01 .....  | 20   |
| SCHEMATIC — 01A ..... | 21   |
| <u>P/S 250623</u>     |      |
| WIRING DIAGRAM .....  | 22   |
| PARTS INFO .....      | 23   |
| TROUBLESHOOTING ..... | 24   |
| SCHEMATIC .....       | 25   |

# INTRODUCTION

The SCHEMATICS and PARTS LISTS provided herein are intended for use by QUALIFIED SERVICE PERSONNEL. The troubleshooting, theory and diagnostics of the C64, 1702 and 1541 SERVICE MANUALS are **generally** applicable to the SX 64.

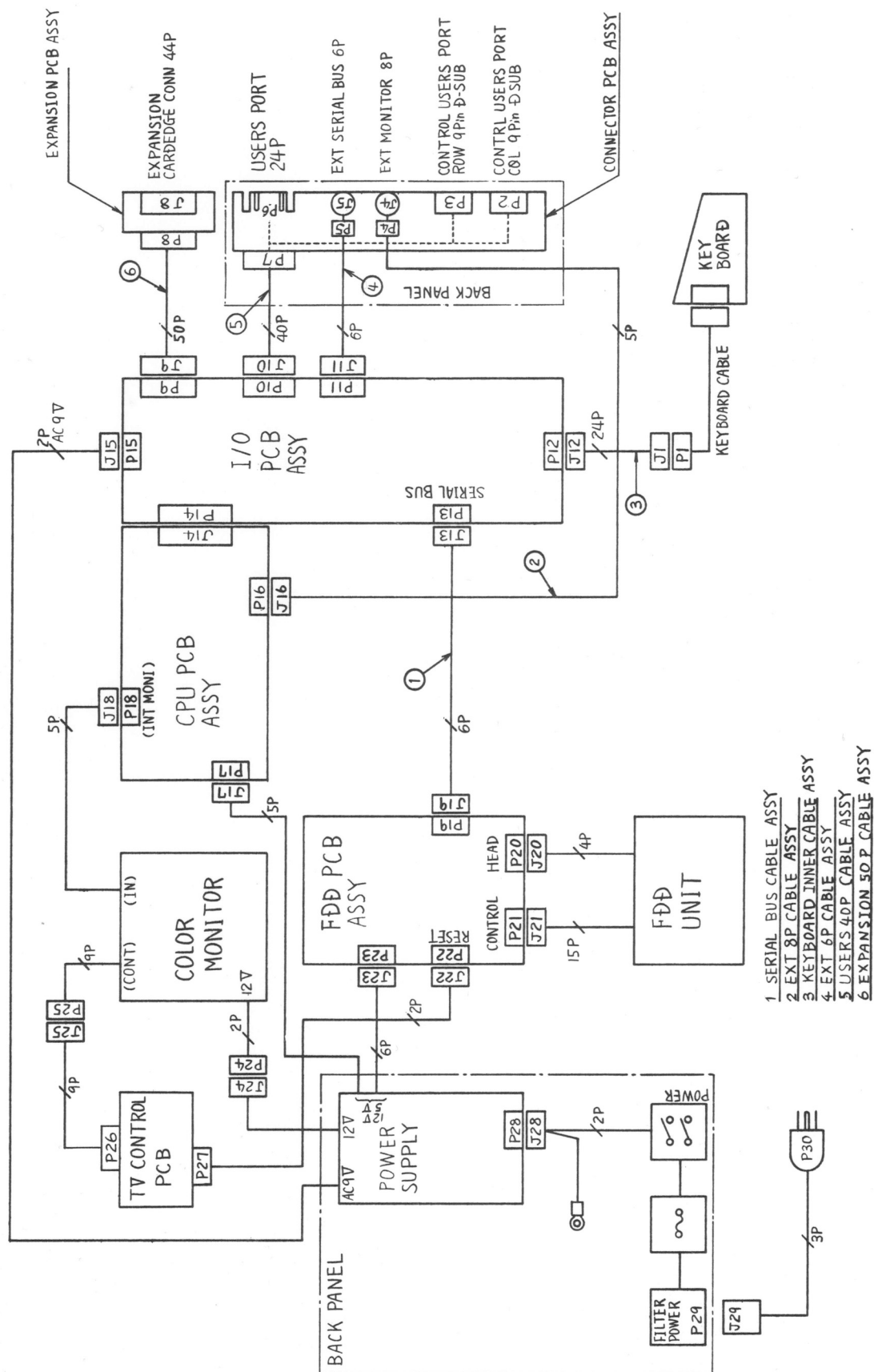
Parts availability from Commodore is limited. Some of the custom chips are used in many devices and are in stock. However, parts used in the monitor and power supply may be unique to the OEM manufacturer who supplied those assemblies. Only those parts indicated with a "C" are available from Commodore.

## ASSEMBLY PARTS

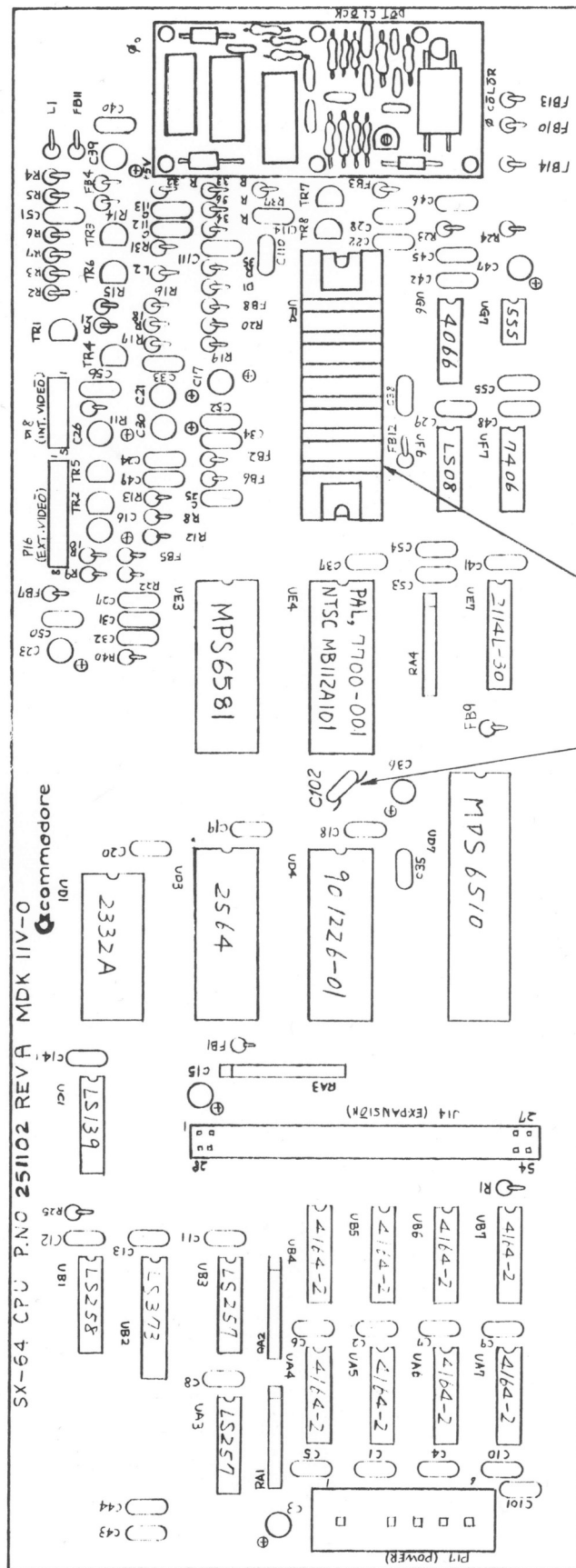
|             |       |                 |
|-------------|-------|-----------------|
| C 250634-01 | SX 64 | KEYBOARD CABLE  |
| C 251249-01 | SX 64 | USERS MANUAL    |
| C 251250-01 | SX 64 | DEMO DISK       |
| C 251555-01 | SX 64 | KEYBOARD        |
| C 314095-01 | SX 64 | SINGLE KEY ASSY |
| C 325519-03 | SX 64 | ALPS DRIVE ASSY |



# BLOCK DIAGRAM

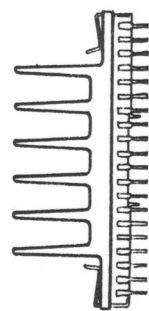
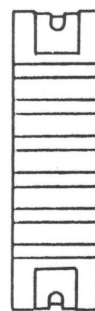
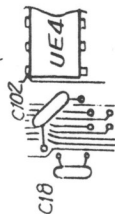


# **SX 64 CPU PCB LAYOUT**



SEE DETAIL A

DETAIL



DETAIL A

# PARTS LIST

## SX 64 CPU

### PCB ASSEMBLY #250408-01

#### PLEASE NOTE

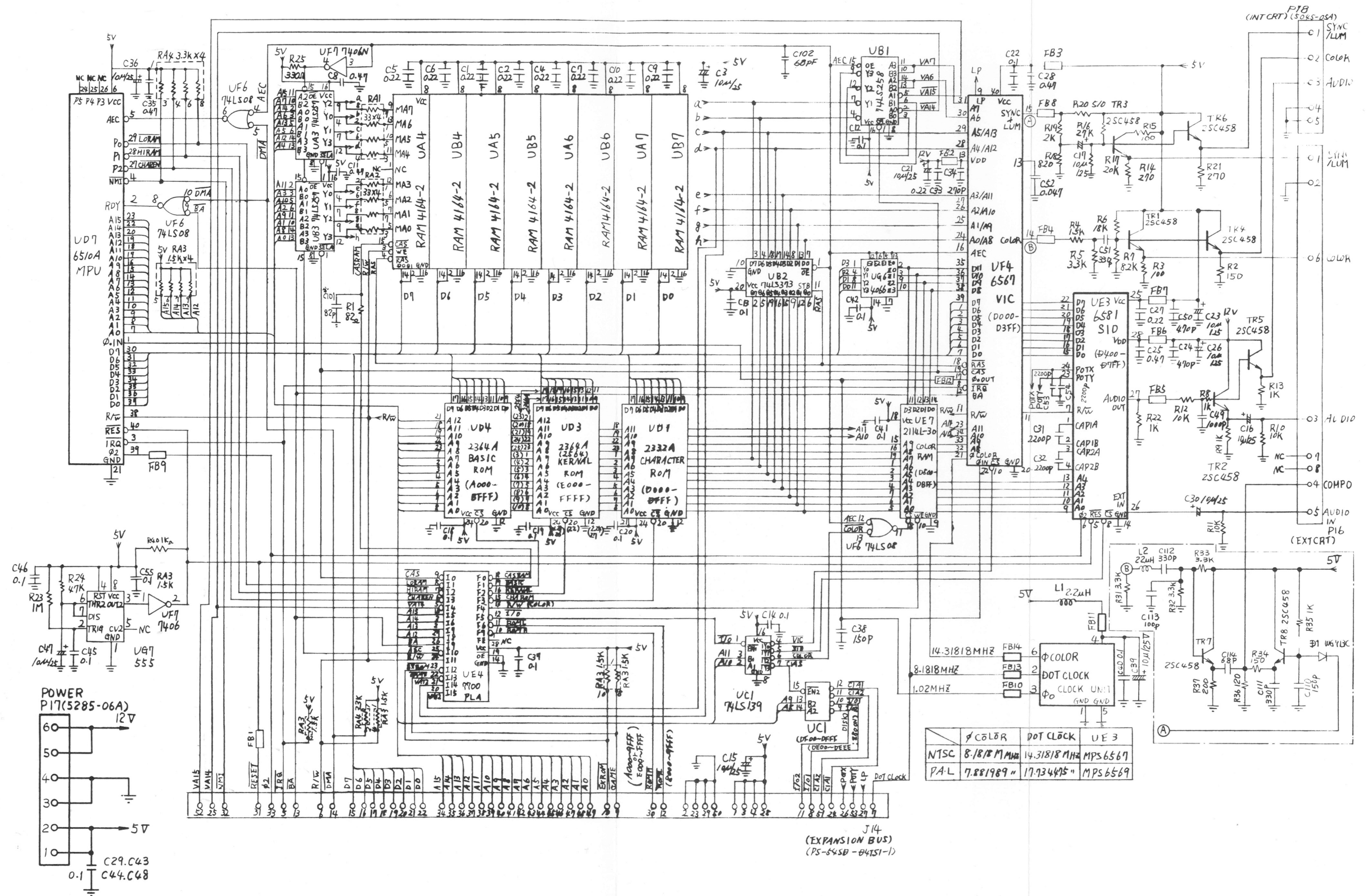
Commodore part numbers are provided for reference only and do not indicate the availability of parts from Commodore. Industry standard parts (Resistors, Capacitors, Connectors) should be secured locally.

| INTEGRATED CIRCUITS                                                    |                       |                     | RESISTORS (Continued) |         |               |     |
|------------------------------------------------------------------------|-----------------------|---------------------|-----------------------|---------|---------------|-----|
| UA3                                                                    | 74LS257               | DO NOT USE TI OR NS | R21                   | 270     |               |     |
| UA4-UA7                                                                | 4164 DRAM 200NS       |                     | R22                   | 1K      |               |     |
| UB1                                                                    | 74LS258               |                     | R23                   | 1M      |               |     |
| UB2                                                                    | 74LS373               |                     | R24                   | 47K     |               |     |
| UB3                                                                    | 74LS257               | DO NOT USE TI OR NS | R25                   | 330     |               |     |
| UB4-UB7                                                                | 4164 DRAM 200NS       |                     | R31, 32,              | 3.3K    |               |     |
| UC1                                                                    | 74LS139               |                     | 33                    |         |               |     |
| UD1                                                                    | 2332 ROM CHAR         | C 901225-01         | R34                   | 150     |               |     |
| UD3                                                                    | 2364 ROM Kernal       | C 251104-04         | R35                   | 1K      |               |     |
| UD4                                                                    | 2364 ROM Basic        | C 901226-01         | R36                   | 120     |               |     |
| UD7                                                                    | 6510 Microprocessor   | C 906107-01         | R37                   | 200     |               |     |
| UE3                                                                    | 6581 SID              | C 906112-01         | RESISTOR PACKS        |         |               |     |
| UE4                                                                    | 7700-001 PLA          | C 906114-01         | RA1, 2                | 33      | 8Pin          |     |
| UE7                                                                    | 2114 RAM 300NS        |                     | RA3                   | 3.3K    | 10Pin         |     |
| UF4                                                                    | 6567 VIC              | C 906109-04         | RA4                   | 3.3K    | 8Pin          |     |
| UF6                                                                    | 7408                  |                     | CAPACITORS            |         |               |     |
| UF7                                                                    | 7406                  |                     | C1, 2                 | Ceramic | 0.22 $\mu$ F, | 25V |
| UG6                                                                    | 4066                  |                     | C3                    | Elect   | 10 $\mu$ F,   | 25V |
| UG7                                                                    | 555 TIMER             |                     | C4-7                  | Ceramic | 0.22 $\mu$ F, | 25V |
| TRANSISTORS                                                            |                       |                     | C8                    | Ceramic | 0.47 $\mu$ F, | 50V |
| TR1-8                                                                  | 2SC 458               |                     | C9,10                 | Ceramic | 0.22 $\mu$ F, | 25V |
| DIODES                                                                 |                       |                     | C11                   | Ceramic | 0.47 $\mu$ F, | 50V |
| D1                                                                     | Diode, Signal WG 713C |                     | C12-14                | Ceramic | 0.1 $\mu$ F,  | 25V |
| RESISTORS — All Values are in ohms-1/4 W<br>5% unless noted otherwise. |                       |                     | C15-17                | Elect   | 10 $\mu$ F,   | 25V |
| R1                                                                     | 82                    |                     | C18-20                | Ceramic | 0.1 $\mu$ F,  | 25V |
| R2                                                                     | 150                   |                     | C21                   | Elect   | 10 $\mu$ F,   | 25V |
| R3                                                                     | 100                   |                     | C22                   | Ceramic | 0.1 $\mu$ F,  | 25V |
| R4                                                                     | 1.5K                  |                     | C23                   | Elect   | 10 $\mu$ F,   | 25V |
| R5                                                                     | 3.3K                  |                     | C24                   | Ceramic | 470pF,        | 50V |
| R6                                                                     | 18K                   |                     | C25                   | Ceramic | 0.47 $\mu$ F, | 50V |
| R7                                                                     | 8.2K                  |                     | C26                   | Elect   | 10 $\mu$ F,   | 25V |
| R8                                                                     | 1K                    |                     | C27                   | Ceramic | 0.22 $\mu$ F, | 25V |
| R9                                                                     | 1K                    |                     | C28                   | Ceramic | 0.47 $\mu$ F, | 50V |
| R10, 11,<br>12                                                         | 10K                   |                     | C29                   | Ceramic | 0.1 $\mu$ F,  | 25V |
| R13                                                                    | 1K                    |                     | C30                   | Elect   | 10 $\mu$ F,   | 25V |
| R14                                                                    | 270                   |                     | C31, 32               | Ceramic | 2200pF,       | 50V |
| R15                                                                    | 100                   |                     | C33                   | Ceramic | 0.22 $\mu$ F, | 50V |
| R16                                                                    | 27K                   |                     | C34                   | Ceramic | 270pF,        | 50V |
| R17                                                                    | 20K                   |                     | C35                   | Ceramic | 0.47 $\mu$ F, | 50V |
| R18                                                                    | 820                   |                     | C36                   | Elect   | 10 $\mu$ F,   | 25V |
| R19                                                                    | 2K                    |                     | C37                   | Ceramic | 0.01 $\mu$ F, | 25V |
| R20                                                                    | 510                   |                     | C38                   | Ceramic | 150pF,        | 50V |
|                                                                        |                       |                     | C39                   | Elect   | 10 $\mu$ F,   | 25V |
|                                                                        |                       |                     | C40-46                | Ceramic | 0.1 $\mu$ F,  | 25V |
|                                                                        |                       |                     | C47                   | Elect   | 10 $\mu$ F,   | 25V |
|                                                                        |                       |                     | C48                   | Ceramic | 0.1 $\mu$ F,  | 25V |

**PARTS LIST PCB ASSEMBLY #250408-01 (Continued)****C - Indicates Commodore Stocked Part Number**

| CAPACITORS (Continued) |         |                |     | MISCELLANEOUS |                                  |
|------------------------|---------|----------------|-----|---------------|----------------------------------|
| C49                    | Ceramic | 1000pF,        | 25V | FB1-14        | Ferrite bead                     |
| C50                    | Ceramic | 470pF,         | 50V |               |                                  |
| C51                    | Ceramic | 33pF,          | 50V | L1            | Coil Inductor 2.2 $\mu$ H        |
| C52                    | Ceramic | 0.047 $\mu$ F, | 25V | L2            | Coil Inductor 22 $\mu$ H         |
| C53, 54                | Ceramic | 1800pF,        | 50V |               |                                  |
| C55                    | Ceramic | 0.1 $\mu$ F,   | 25V | Y1            | Clock Osc 14.31818 MHz 251105-01 |
| C101                   | Ceramic | 82pF           |     |               |                                  |
| C102                   | Ceramic | 68pF           |     |               |                                  |
| C110                   | Ceramic | 150pF,         | 50V |               |                                  |
| C111, 12               | Ceramic | 330pF          |     |               |                                  |
| C113                   | Ceramic | 100pF          |     |               |                                  |
| C114                   | Ceramic | 68pF           |     |               |                                  |

## SX 64 CPU SCHEMATIC DIAGRAM





# PARTS LIST

## SX 64 DISK CONTROL PCB

### PCB ASSEMBLY #250410-01

#### PLEASE NOTE:

Commodore part numbers are provided for reference only and do not indicate the availability of parts from Commodore. Industry standard parts (Resistors, Capacitors, Connectors) should be secured locally.

| INTEGRATED CIRCUITS                                  |                                  |                 | RESISTORS (Continued)                      |               |             |
|------------------------------------------------------|----------------------------------|-----------------|--------------------------------------------|---------------|-------------|
|                                                      |                                  |                 | — All are carbon 1/4 watt, 5% unless noted |               |             |
| UA1                                                  | TMM2016P RAM                     |                 | R7, 8                                      | 470           |             |
| UA3                                                  | ROM \$E000-\$FFFF                | C 901229-05     | R9                                         | 2.2K          |             |
| UA4                                                  | ROM \$C000-\$DFFF                | C 325302-01     | R10                                        | 150 1/4W, 1%  |             |
| UB2                                                  | 74LS04                           |                 | R11                                        | 100 1/4W, 1%  |             |
| UBC3                                                 | 6522 VIA                         | C 901437-01     | R12                                        | 2.2K          |             |
| UBC4                                                 | 6502A CPU                        | C 901435-02     | R13                                        | 470           |             |
| UC2                                                  | 74LS00                           |                 | R14                                        | 2.2K          |             |
| UD2                                                  | 74LS42                           |                 | R15, 16                                    | 22K           |             |
| UD3                                                  | 74LS86                           |                 | R17, 18                                    | 9.1K 1/4W, 1% |             |
| UDC5                                                 | 6522 VIA                         | C 901437-01     | R19, 20                                    | 220           |             |
| UE2                                                  | 74LS14                           |                 | R21, 22                                    | 150           |             |
| UE3                                                  | 7406                             |                 | R23                                        | 330           |             |
| UF2                                                  | M54532P TRANS ARRAY              | MITSUBISHI SUB: | R24, 25                                    | 2.2K          |             |
|                                                      | ULN2064 TRANS ARRAY              |                 | R26, 27                                    | 470           |             |
| UF3                                                  | 7404                             |                 | R28                                        | 360           |             |
| UF5                                                  | GATE ARRAY                       | C 325572-01     | R29                                        | 510           |             |
| UG4                                                  | 7407                             |                 | R30                                        | 22K           |             |
| UG5                                                  | 74LS193                          |                 | R31                                        | 360           |             |
| UH1                                                  | 592 VIDEO AMP                    |                 | R32                                        | 5.1K          |             |
| UH4                                                  | 9602 ONE SHOT                    |                 | R33                                        | 220           |             |
| UH5                                                  | 74LS197                          |                 | R34                                        | 330           |             |
| UJ1                                                  | 592 VIDEO AMP                    |                 | R35                                        | 1K            |             |
| UJ4                                                  | 74LS86                           |                 | R36                                        | 330           |             |
| UK4                                                  | LM311 COMPARATOR                 |                 | R37, 38                                    | 150           |             |
| TRANSISTORS                                          |                                  |                 | R39                                        | 100K          |             |
| TR1                                                  | 2SC 945                          | SUB:2SC 1815    | R40-43                                     | 1K            |             |
| TR2-5                                                | 2SA 733                          | SUB:2SA 1015    | R44                                        | 10K           |             |
| TR6                                                  | 2SA 673                          |                 | R45                                        | 100           |             |
| TR7                                                  | 2SC 945                          | SUB:2SC 1815    | R46-49                                     | 1K            |             |
| DIODES                                               |                                  |                 | R50                                        | 47            |             |
| D1-6                                                 | Signal, 1N4148                   |                 | CAPACITORS                                 |               |             |
| D7                                                   | Zener, 5.1V, 500mW, +/-5% HZ5C-2 |                 | C1, 2                                      | Ceramic       | .1μF, 25V   |
| D8                                                   | Signal, 1N4148                   |                 | C3                                         | Electrolytic  | 3.3μF, 16V  |
| D9                                                   | Zener, 3.3V, 500mW, +/-5% HZ3C-2 |                 | C4                                         | Ceramic       | .1μF, 25V   |
| D10                                                  | Signal, 1N4148                   |                 | C5                                         | Ceramic       | 680pF, 50V  |
| RESISTORS — All are carbon 1/4 watt, 5% unless noted |                                  |                 | C6, 7                                      | Tantalum      | 0.47μF, 16V |
| R1                                                   | 680                              |                 | C8                                         | Ceramic       | .1μF, 25V   |
| R2                                                   | 22K                              |                 | C9                                         | Ceramic       | 1000pF, 25V |
| R3                                                   | 91 1/4W, 1%                      |                 | C10, 11                                    | Ceramic       | .022μF, 25V |
| R4                                                   | 1.5K                             |                 | C12                                        | Ceramic       | 330pF, 50V  |
| R5                                                   | 470                              |                 | C13                                        | Ceramic       | .1μF, 25V   |
| R6                                                   | 680                              |                 | C14                                        | Ceramic       | 680pF, 50V  |
|                                                      |                                  |                 | C15                                        | Ceramic       | 330pF, 50V  |
|                                                      |                                  |                 | C16                                        | Ceramic       | 680pF, 50V  |
|                                                      |                                  |                 | C17                                        | Ceramic       | 33pF, 50V   |
|                                                      |                                  |                 | C18                                        | Electrolytic  | 10μF, 25V   |
|                                                      |                                  |                 | C19-21                                     | Ceramic       | .1μF, 25V   |

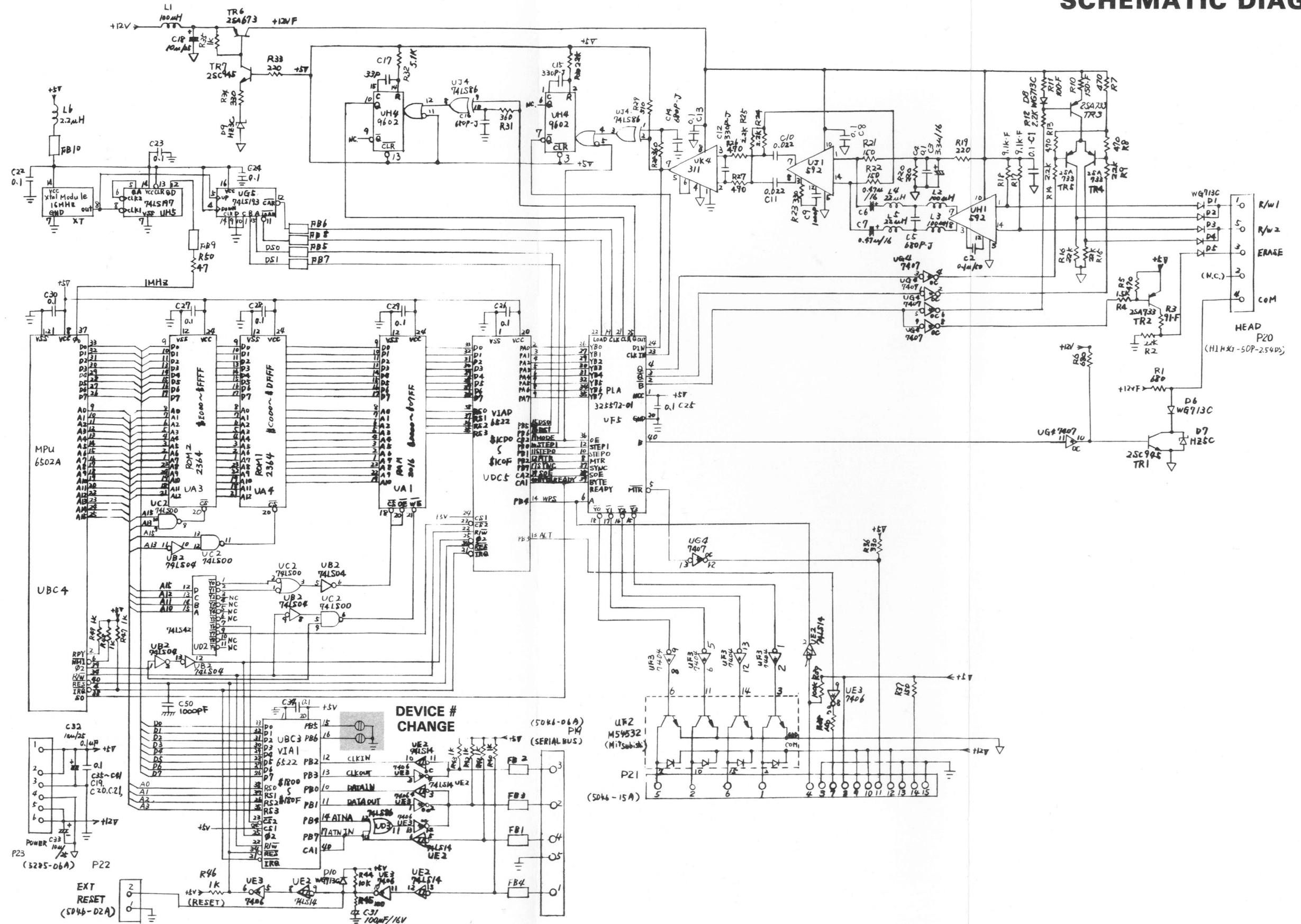
# **PARTS LIST SX 64 CPU PCB ASSEMBLY #250410-01 (Continued)**

**C - Indicates Commodore Stocked Part Number**

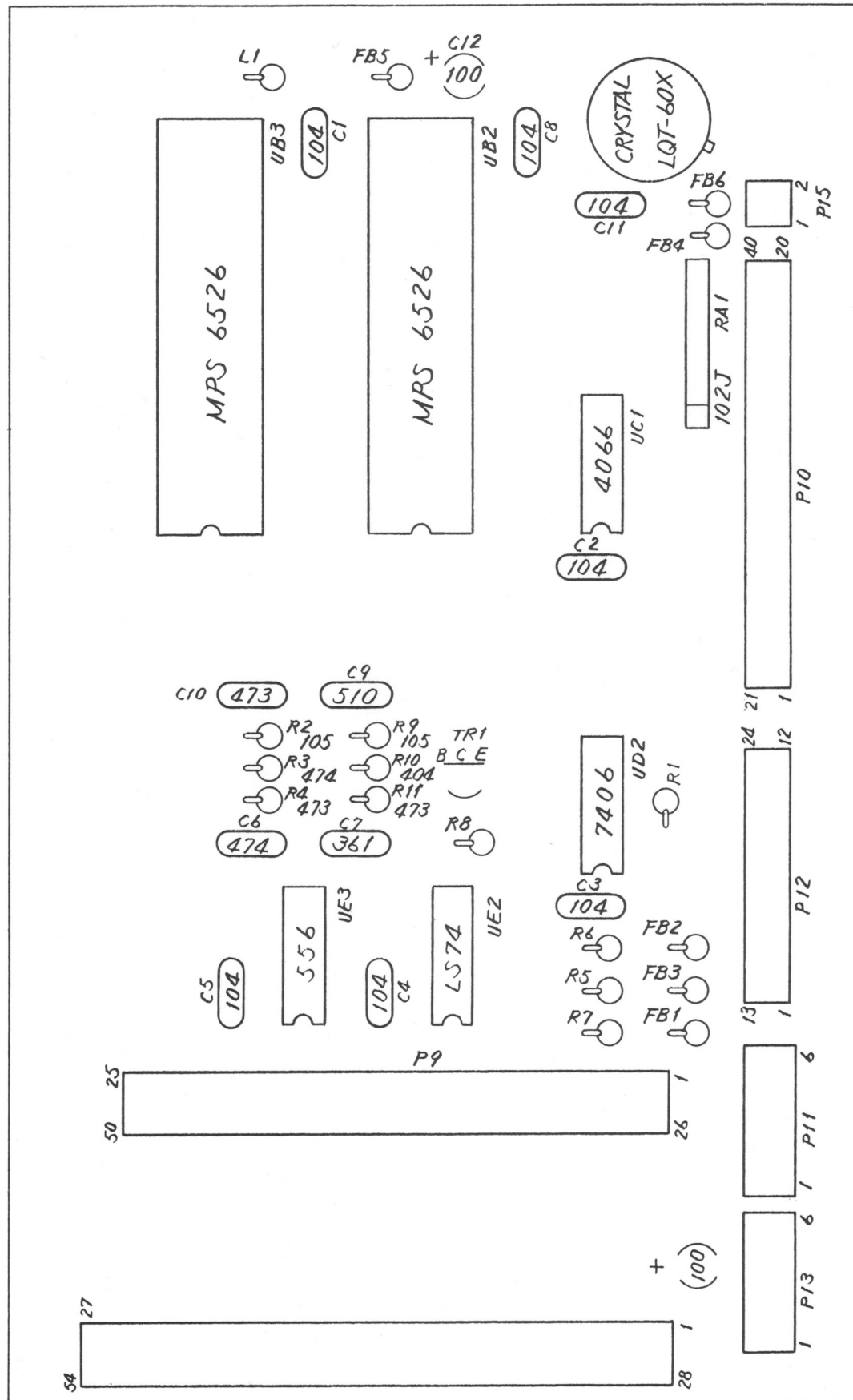
| CAPACITORS (Continued) |              |              |     | MISCELLANEOUS — PCB ASSY #1540048 |                                                                                                                                 |
|------------------------|--------------|--------------|-----|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| C22-30                 | Ceramic      | .1 $\mu$ F,  | 25V | FB1-10                            | Ferrite Bead                                                                                                                    |
| C31                    | Electrolytic | 100 $\mu$ F, | 16V |                                   |                                                                                                                                 |
| C32, 33                | Electrolytic | 10 $\mu$ F,  | 25V | L1-3                              | Coil Inductor 100 $\mu$ H                                                                                                       |
| C34-41                 | Ceramic      | .1 $\mu$ F,  | 25V | L4, 5                             | Coil Inductor 22 $\mu$ H                                                                                                        |
| C50                    | Ceramic      | 1000pF,      | 25V | L6                                | Coil Inductor 2.2 $\mu$ H                                                                                                       |
|                        |              |              |     | Y1                                | Crystal Module 16 MHz 50ppm (NDK, Tyocom)<br>325566-01 Sub:<br>Crystal Module 16 MHz 100ppm (NDK, Tyocom,<br>Kyocera) 325566-02 |



# SX 64 FDD SCHEMATIC DIAGRAM



# SX 64 I/O PCB LAYOUT



# PARTS LIST

## SX 64 I/O

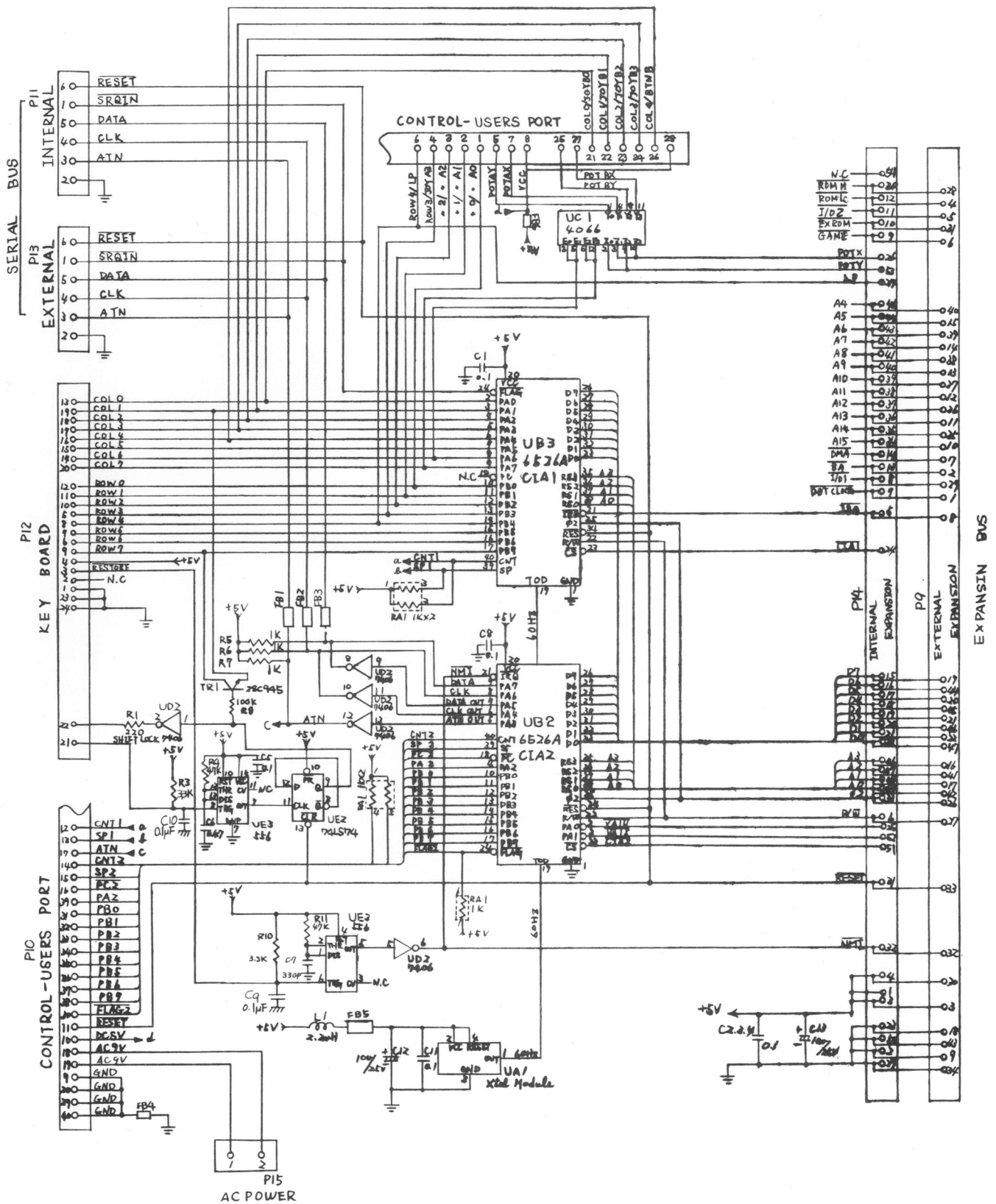
### PCB ASSEMBLY #250409-01

**PLEASE NOTE:**

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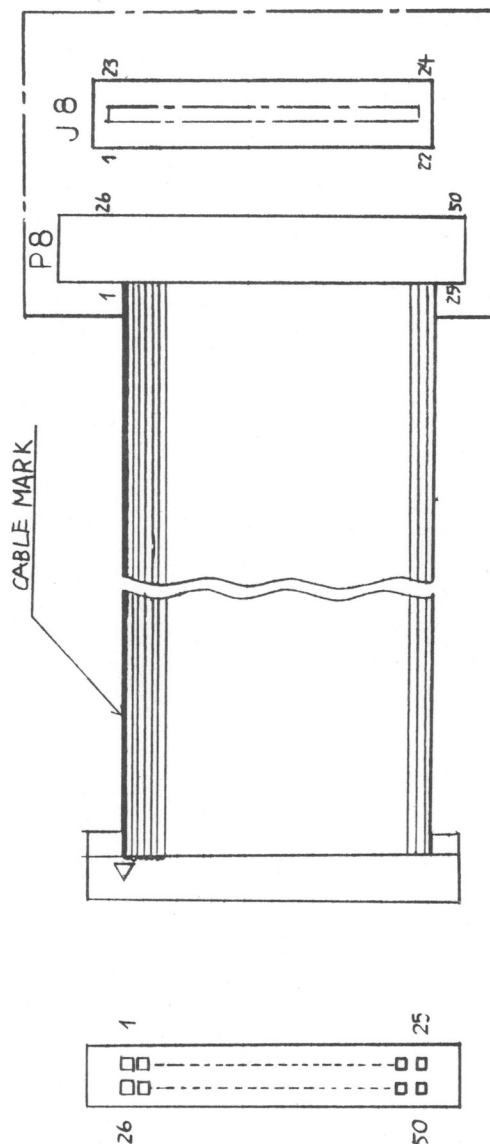
| INTEGRATED CIRCUITS                                                           |          | RESISTOR PACK        |                           |
|-------------------------------------------------------------------------------|----------|----------------------|---------------------------|
| UC1                                                                           | 4066     | RA1                  | 1K 8Pin                   |
| UB2, 3                                                                        | 6526 CIA | <b>CAPACITORS</b>    |                           |
| UD2                                                                           | 7406     |                      |                           |
| UE2                                                                           | 74LS74A  | C1-5                 | Ceramic 0.1 $\mu$ F, 25V  |
| UE3                                                                           | 556      | C6                   | Ceramic 0.47 $\mu$ F, 50V |
| <b>TRANSISTORS</b>                                                            |          | C7                   | Ceramic 330pF, 50V        |
| TR1                                                                           | 2SC 945  | C8-11                | Ceramic 0.1 $\mu$ F, 25V  |
| <b>RESISTORS</b> — All Values are in ohms-1/4 W<br>5% unless noted otherwise. |          | C12, 13              | Elect 10 $\mu$ F, 25V     |
| R1                                                                            | 220      | <b>MISCELLANEOUS</b> |                           |
| R3                                                                            | 3.3K     | FB1-6                | Ferrite Bead              |
| R4                                                                            | 47K      | L1                   | Coil Inductor 2.2 $\mu$ H |
| R5, 6, 7                                                                      | 1K       | UA1                  | Crystal Module 60Hz       |
| R8                                                                            | 100K     |                      |                           |
| R10                                                                           | 3.3K     |                      |                           |
| R11                                                                           | 47K      |                      |                           |

## SX 64 I/O SCHEMATIC DIAGRAM

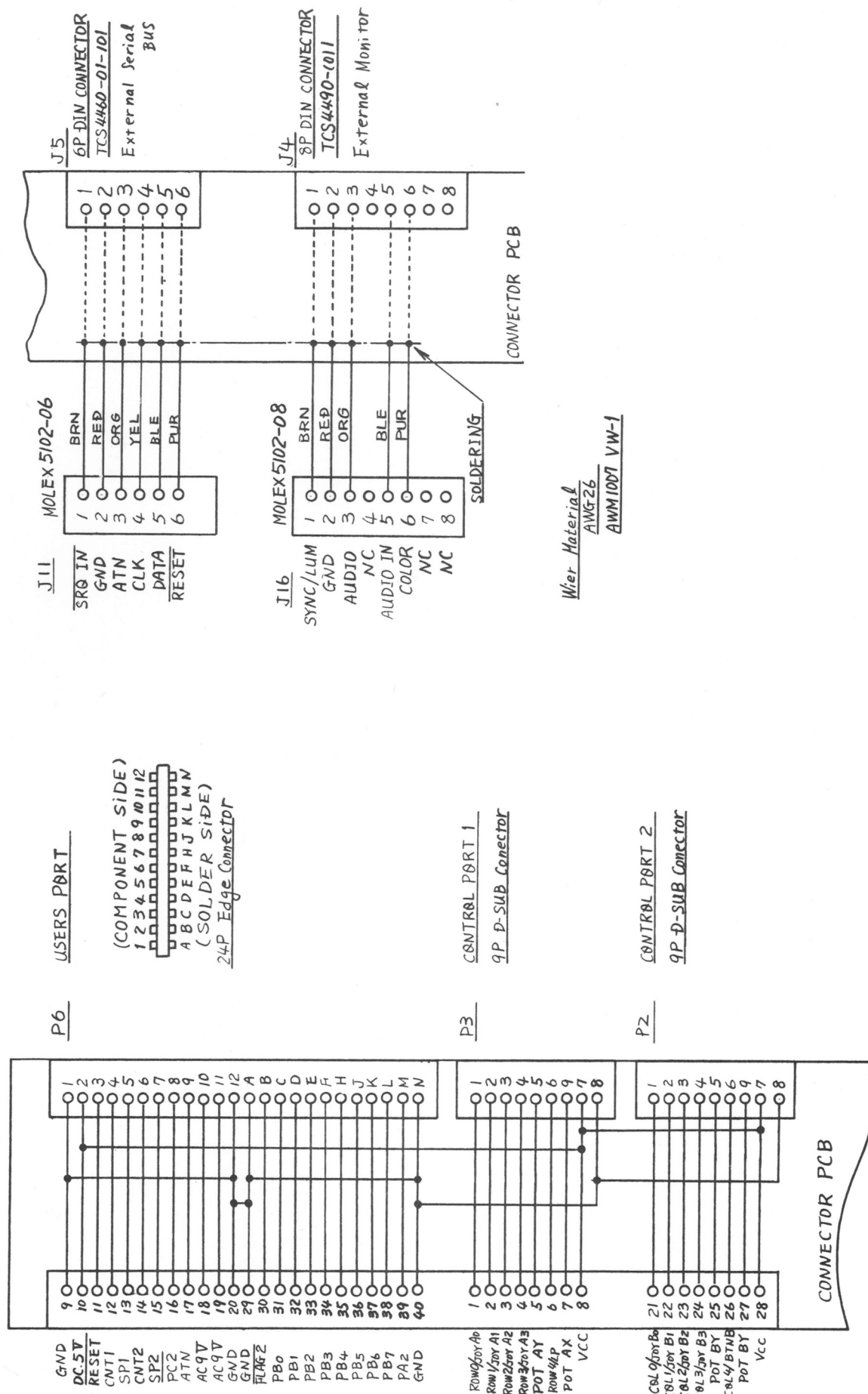


# SX 64 EXPANSION PCB LAYOUT

| EXPANSION          | P8 | J8 | EXPANSION                               | P8 | J8 |
|--------------------|----|----|-----------------------------------------|----|----|
| GND                | 9  | 1  | GND                                     | 34 | 23 |
| +5 V               | 3  | 2  | $\overline{RD\overline{M\overline{H}}}$ | 28 | 24 |
| +5 V               | 30 | 3  | RESET                                   | 33 | 25 |
| $\overline{LRQ}$   | 8  | 4  | $\overline{NMI}$                        | 32 | 26 |
| R/W                | 27 | 5  | $\overline{S\overline{O}2}$             | 26 | 27 |
| DOT CLOCK          | 1  | 6  | A15                                     | 10 | 28 |
| $\overline{I/O1}$  | 29 | 7  | A14                                     | 35 | 29 |
| GAME               | 6  | 8  | A13                                     | 11 | 30 |
| $\overline{EXROM}$ | 31 | 9  | A12                                     | 36 | 31 |
| $\overline{I/O2}$  | 5  | 10 | A11                                     | 12 | 32 |
| $\overline{ROML}$  | 4  | 11 | A10                                     | 37 | 33 |
| BA                 | 2  | 12 | A9                                      | 13 | 34 |
| $\overline{DMA}$   | 7  | 13 | A8                                      | 38 | 35 |
| D7                 | 19 | 14 | A7                                      | 14 | 36 |
| D6                 | 44 | 15 | A6                                      | 39 | 37 |
| D5                 | 20 | 16 | A5                                      | 15 | 38 |
| D4                 | 45 | 17 | A4                                      | 40 | 39 |
| D3                 | 21 | 18 | A3                                      | 16 | 40 |
| D2                 | 46 | 19 | A2                                      | 41 | 41 |
| D1                 | 22 | 20 | A1                                      | 17 | 42 |
| D0                 | 47 | 21 | A0                                      | 42 | 43 |
| GND                | 18 | 22 | GND                                     | 43 | 44 |
| OPEN               | 23 | —  | OPEN                                    | 48 | —  |
| "                  | 24 | —  | "                                       | 49 | —  |
| "                  | 25 | —  | "                                       | 50 | —  |



# SX 64 EXPANSION SCHEMATIC DIAGRAM







# SX 64 MONITOR ASSEMBLY PARTS LIST

## PLEASE NOTE:

Commodore part numbers are provided for reference only and do not indicate the availability of parts from Commodore. Industry standard parts (Resistors, Capacitors, Connectors) should be secured locally.

## CHASSIS PARTS

|      |               |                            |
|------|---------------|----------------------------|
| V01  | *CRT,         | 150BMB22-AF                |
|      | *CRT Socket,  | C39158-D                   |
| DY1  | *Def. Yoke,   | C29131-VA (See note below) |
| T502 | *F.B. Transf. | CJ39587-00A                |
| Q907 | Transistor,   | 2SD1118                    |
| Q503 | Transistor,   | 2SC2335                    |
| R523 | *Focus Pack,  | CJ49510-257                |
| C001 | *Ceramic Cap, | 1000pF, 3KV, +100%, -0%    |

### NOTE:

IF DEFLECTION YOKE CJ26235-00A IS USED,  
THE FOLLOWING PARTS VALUES CHANGE:

| DEF and POWER REG PCB 1124 A-1 |                 |                               |
|--------------------------------|-----------------|-------------------------------|
| CAPACITORS                     |                 |                               |
| C515, 517                      | *Polypropylene, | 5600pF, 630V, $\pm 5\%$       |
| C519, 520                      | *Elect,         | 4.7 $\mu$ F, 160V, +30%, -10% |

| VIDEO and AUDIO PCB 1124 A-2 |                 |                               |
|------------------------------|-----------------|-------------------------------|
| CAPACITORS                   |                 |                               |
| C201                         | Elect,          | 1000 $\mu$ F, 25V, $\pm 20\%$ |
| C206                         | Bi-Polar Elect, | 4.7 $\mu$ F, 50V, $\pm 20\%$  |
| C522                         | Mylar,          | .1 $\mu$ F, 50V, $\pm 20\%$   |

\* SAFETY COMPONENTS — Use EXACT replacement ONLY.



| DEF and POWER REG PCB 1123 A-1                                                            |                                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| INTEGRATED CIRCUITS                                                                       |                                                                                                                                                                                                                                            |
| IC401<br>IC501                                                                            | Vert., $\mu$ PC1031H2<br>Hor., AN5750                                                                                                                                                                                                      |
| TRANSISTORS                                                                               |                                                                                                                                                                                                                                            |
| Q401<br>Q501<br>Q502<br>Q902<br>Q903,4,5<br>Q906<br>Q907                                  | 2SA1015 (Y, GR)<br>2SC1685<br>2SA817A (O,Y)<br>2SA1015 (Y, GR)<br>2SC1685<br>2SA817A (O,Y)<br>2SD1118                                                                                                                                      |
| DIODES                                                                                    |                                                                                                                                                                                                                                            |
| D501<br>D502<br>D504,5,<br>6,7<br>D902<br>D903<br>D904<br>D905<br>D906<br>D907<br>D908, 9 | Zener RD6.8E (B2)<br>V19E<br>V09E<br><br>U19B<br>*Zener RD6.8E (B2)<br>Zener Hz12 (B)<br>*Zener RD6.8E (B2)<br>1S2473H<br>*Zener RD13E (B1)<br>1S2473H                                                                                     |
| RESISTORS                                                                                 |                                                                                                                                                                                                                                            |
| R901<br>R910<br>R917<br>R923<br>R924<br>R925<br>R926                                      | * Carbon, 8.2K, 1/4W, $\pm$ 5%<br>* Carbon, 9.1K, 1/4W, $\pm$ 5%<br>Oxide Mtl Film, 1.5K, 1W, $\pm$ 5%<br>* Carbon, 27K, 1/4W, $\pm$ 5%<br>* Carbon, 10K, 1/4W, $\pm$ 5%<br>* Carbon, 68K, 1/4W, $\pm$ 5%<br>Mtl Film, 0.22, 2W, $\pm$ 10% |
| VARIABLE RESISTORS                                                                        |                                                                                                                                                                                                                                            |
| R409<br>R413<br>R417<br>R508<br>R909                                                      | V. Hght, 22K<br>V. Lin, 2.2K<br>V. Center, 1K<br>Hor. Hold, 2.2K<br>*B1 Adj., 2K                                                                                                                                                           |

| CAPACITORS                                                                                                                                             |                                                                                                                                                                                                                    |                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| C401, 404<br>C408<br>C409, 410<br>C412<br>C413<br>C509<br>C515,16,<br>17<br>C518<br>C520<br>C523, 24<br>C525<br>C901<br>C904, 905<br>C907<br>C913, 914 | Bi-Polar Elect,<br>Tantalium,<br>Tantalium,<br>Elect,<br>Elect,<br>Polypropylene,<br>*Polypropylene,<br><br>Mtl Mylar,<br>*Polypropylene,<br>*Elect,<br>Elect,<br>*Elect,<br>*Elect,<br>Bi-Polar Elect,<br>*Elect, | 1 $\mu$ F,<br>1 $\mu$ F,<br>22 $\mu$ F,<br>1000 $\mu$ F,<br>0.22 $\mu$ F,<br>5600pF,<br>4700pF,<br><br>1.5 $\mu$ F,<br>0.047 $\mu$ F,<br>470 $\mu$ F,<br>4.7 $\mu$ F,<br>100 $\mu$ F,<br>470 $\mu$ F,<br>10 $\mu$ F,<br>2200 $\mu$ F, | 50V, $\pm$ 20%<br>25V, $\pm$ 10%<br>10V, $\pm$ 10%<br>25V, $\pm$ 20%<br>50V, $\pm$ 20%<br>50V, $\pm$ 5%<br>630V, $\pm$ 5%<br><br>100V, $\pm$ 5%<br>200V, $\pm$ 10%<br>16V, +30%, -10%<br>160V, +30%, -10%<br>35V, +30%, -10%<br>35V, +30%, -10%<br>25V, $\pm$ 20%<br>16V, +30%, -10% |
| TRANSFORMERS                                                                                                                                           |                                                                                                                                                                                                                    |                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                      |
| T901<br>T501<br>T502<br>T531                                                                                                                           | Pwr Drive,<br>Hor Drive,<br>*F.B.,<br>*Side Pin,                                                                                                                                                                   | A76567-MA<br>A76568-MA<br>CJ39587-00A<br>C39084-A                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                      |
| MISCELLANEOUS                                                                                                                                          |                                                                                                                                                                                                                    |                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                      |
| F03                                                                                                                                                    | *Fuse, 2A, 125V                                                                                                                                                                                                    |                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                      |
| VIDEO and AUDIO PCB ASSY 1123 A-2                                                                                                                      |                                                                                                                                                                                                                    |                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                      |
| INTEGRATED CIRCUITS                                                                                                                                    |                                                                                                                                                                                                                    |                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                      |
| IC201<br>IC601                                                                                                                                         | Audio, HA11401<br>Video, AN5250                                                                                                                                                                                    |                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                      |
| TRANSISTORS                                                                                                                                            |                                                                                                                                                                                                                    |                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                      |
| Q201<br>Q601                                                                                                                                           | 2SA562TM (Y)<br>2SD1133                                                                                                                                                                                            |                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                      |
| DIODES                                                                                                                                                 |                                                                                                                                                                                                                    |                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                      |
| D601<br>D503                                                                                                                                           | Zener, RD10E (B3)<br>1S2076A                                                                                                                                                                                       |                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                      |

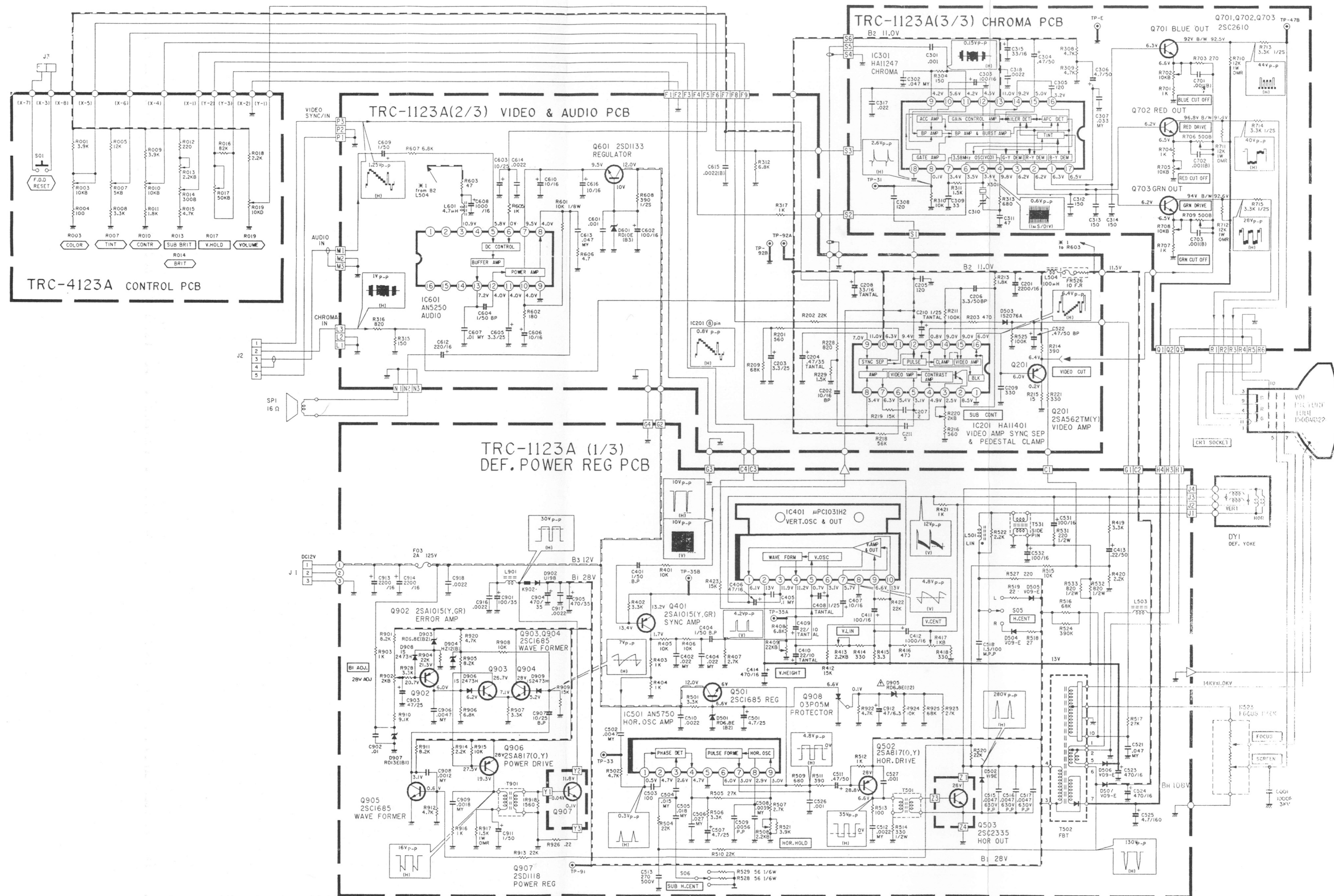
\* SAFETY COMPONENTS — Use EXACT replacement ONLY.

| VIDEO and AUDIO<br>PCB ASSY 1123 A-2 (Continued) |                                  |         |                 |
|--------------------------------------------------|----------------------------------|---------|-----------------|
| VARIABLE RESISTOR                                |                                  |         |                 |
| R220                                             | Sub Cont, 2K                     |         |                 |
| CAPACITORS                                       |                                  |         |                 |
| C201                                             | Elect,                           | 2200μF, | 16V, +30%, -10% |
| C202                                             | Bi-Polar Elect,                  | 10μF,   | 16V, ±20%       |
| C203                                             | Elect,                           | 3.3μF,  | 25V, +30%, -10% |
| C204                                             | Tantalium,                       | 0.47μF, | 35V, ±20%       |
| C206                                             | Bi-Polar Elect,                  | 3.3μF,  | 50V, ±20%       |
| C208                                             | Tantalium,                       | 33μF,   | 16V, ±10%       |
| C210                                             | Tantalium,                       | 1μF,    | 25V, ±20%       |
| C604                                             | Bi-Polar Elect,                  | 1μF,    | 50V, ±20%       |
| C608                                             | Elect,                           | 1000μF, | 25V, ±20%       |
| C522                                             | Bi-Polar Elect,                  | 0.47μF, | 50V, ±20%       |
| MISCELLANEOUS                                    |                                  |         |                 |
| FR526                                            | *Fusible Resistor, 10, 1/4W, ±5% |         |                 |
| L504                                             | Peaking Coil                     | 100μH   |                 |
| L601                                             | Peaking Coil                     | 4.7μH   |                 |

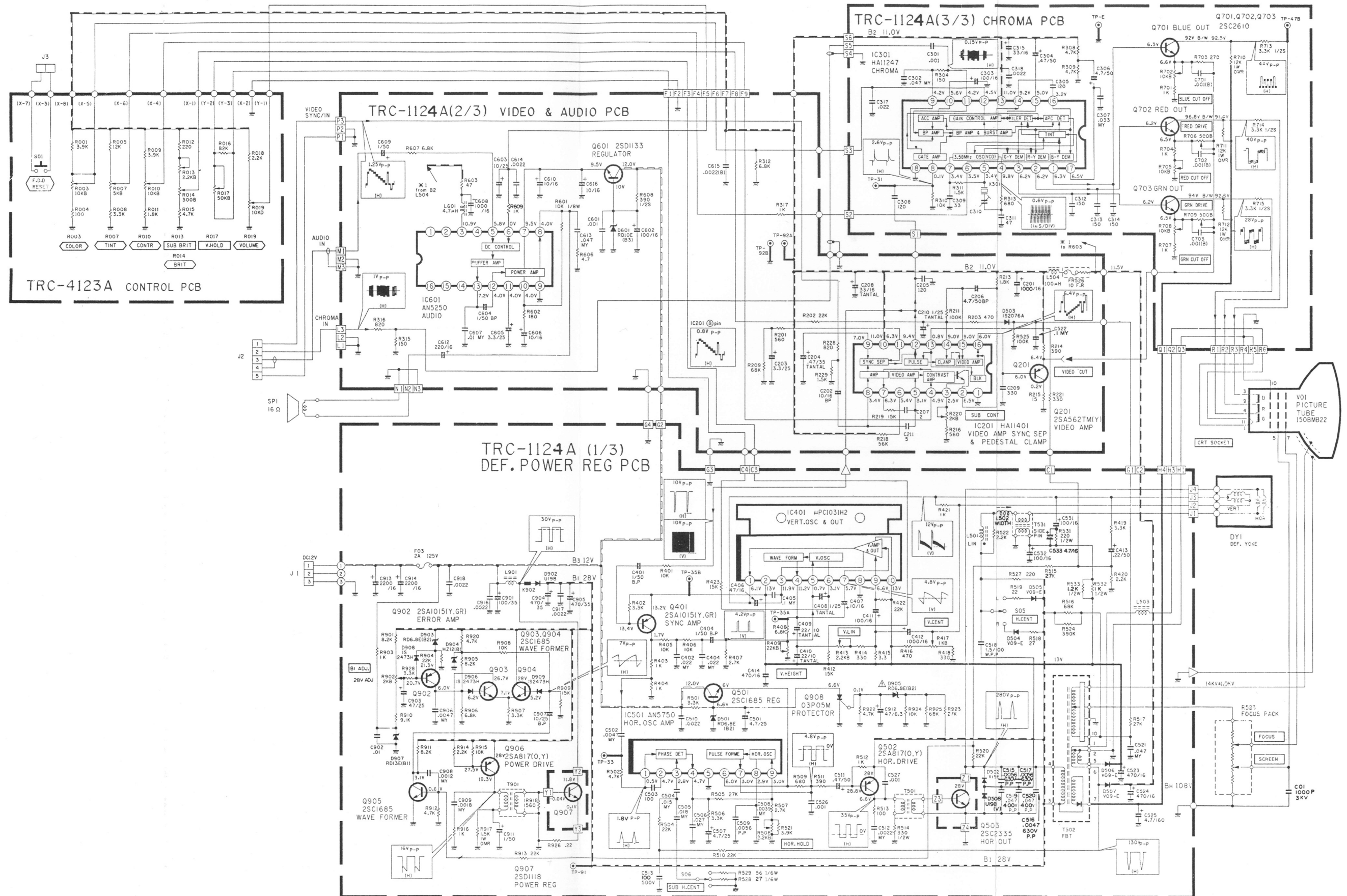
| CHROMA PCB ASSY 1123 A-3 |                              |         |           |
|--------------------------|------------------------------|---------|-----------|
| INTEGRATED CIRCUITS      |                              |         |           |
| IC301                    | HA11247                      |         |           |
| TRANSISTORS              |                              |         |           |
| Q701,2,3                 | 2SC2610                      |         |           |
| RESISTORS                |                              |         |           |
| R710,11,<br>12           | Oxide Mtl Film, 12K, 1W, ±5% |         |           |
| VARIABLE RESISTORS       |                              |         |           |
| R702                     | B. Cut-Off, 10K              |         |           |
| R705                     | R. Cut-Off, 10K              |         |           |
| R706                     | R. Drive, 500                |         |           |
| R708                     | G. Cut-Off, 10K              |         |           |
| R709                     | G. Drive, 500                |         |           |
| CAPACITORS               |                              |         |           |
| C303                     | Elect,                       | 100μF,  | 16V, ±20% |
| C304                     | Elect,                       | 0.47μF, | 50V, ±20% |
| C306                     | Elect,                       | 4.7μF,  | 50V, ±20% |
| C310                     | Trimmer                      |         |           |
| C315                     | Elect,                       | 33μF,   | 16V, ±20% |
| MISCELLANEOUS            |                              |         |           |
| X301                     | Crystal A75746               |         |           |

\*SAFETY COMPONENTS — Use EXACT replacement ONLY.

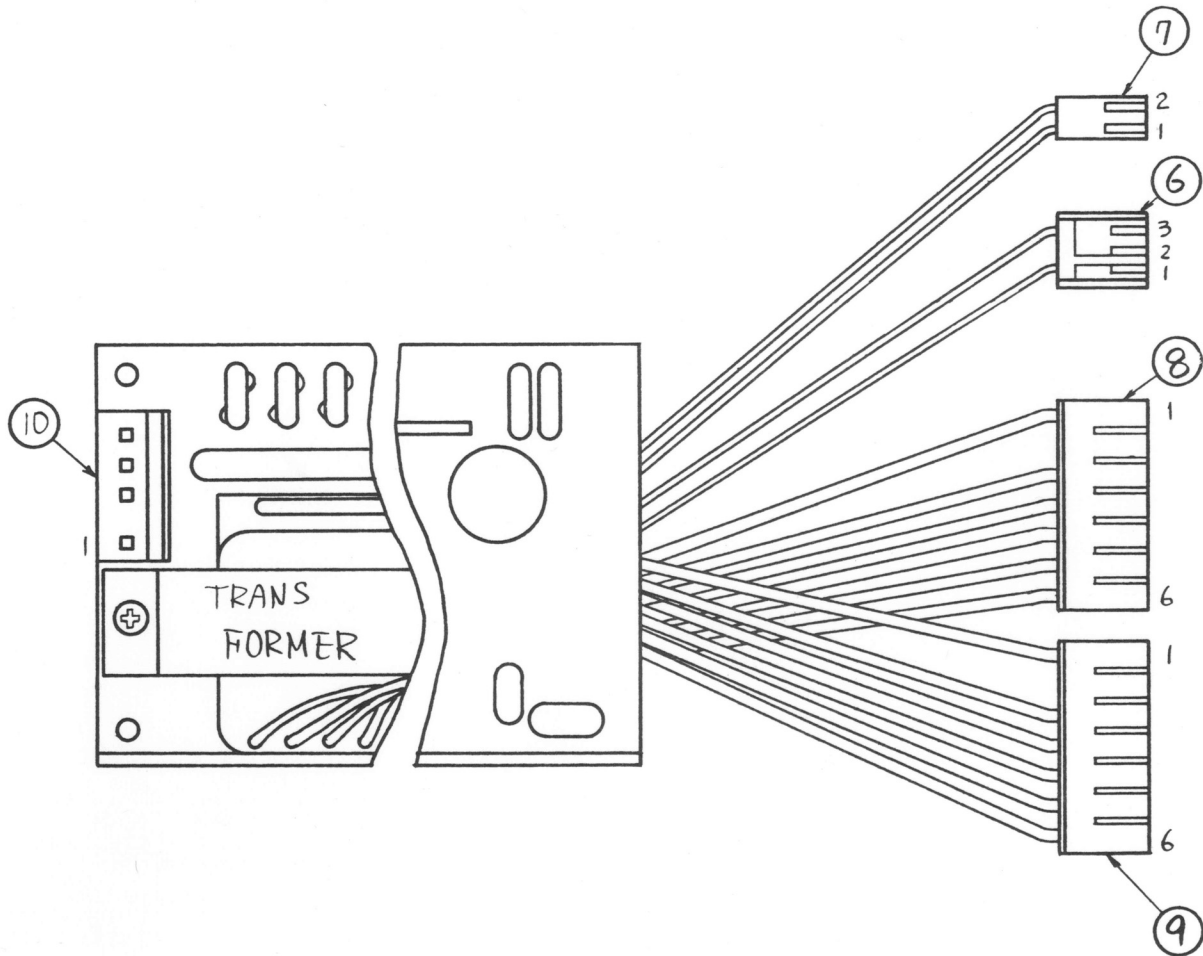
# SX 64 MONITOR SCHEMATIC -01



# SX 64 MONITOR SCHEMATIC -01A



# POWER SUPPLY #250623 WIRING DIAGRAM

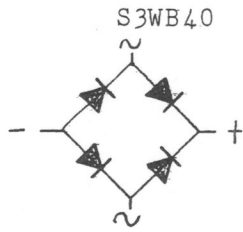


| PART NO | VENDOR NO      | VENDOR'S NAME | POLE | PIN NO | NAME OF SIGNAL | COLOR | WIRE            | NOTE |
|---------|----------------|---------------|------|--------|----------------|-------|-----------------|------|
| 6       | Ei<br>171822-3 | AMP           | 3    | 1      | 12V            | BRN   | UL1007<br>AWG24 |      |
|         |                |               |      | 2      | NC             |       |                 |      |
|         |                |               |      | 3      | GND            | BLK   |                 |      |
| 7       | 5102-02        | MOLEX         | 2    | 1      | AC9V           | BLU   | UL1007<br>AWG24 |      |
|         |                |               |      | 2      | AC9V           | BLU   |                 |      |
| 8       | 5227-06        | MOLEX         | 6    | 1      | 5V             | ORG   | UL1007<br>AWG18 |      |
|         |                |               |      | 2      | 5V             | ORG   |                 |      |
|         |                |               |      | 3      | GND            | BLK   |                 |      |
|         |                |               |      | 4      | GND            | BLK   |                 |      |
|         |                |               |      | 5      | 12V            | RED   |                 |      |
|         |                |               |      | 6      | 12V            | RED   |                 |      |
| 9       | 5227-06        | MOLEX         | 6    | 1      | 5V             | ORG   | UL1007<br>AWG18 |      |
|         |                |               |      | 2      | 5V             | ORG   |                 |      |
|         |                |               |      | 3      | GND            | BLK   |                 |      |
|         |                |               |      | 4      | GND            | BLK   |                 |      |
|         |                |               |      | 5      | 12V            | RED   |                 |      |
|         |                |               |      | 6      | 12V            | RED   |                 |      |
| 10      | 5285-04A       | MOLEX         | 4    | 1      | AC IN          |       |                 |      |
|         |                |               |      | 2      | AC IN          |       |                 |      |
|         |                |               |      | 3      | NC             |       |                 |      |
|         |                |               |      | 4      | F,G            |       |                 |      |

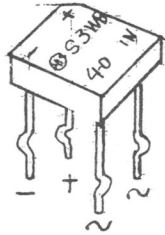


# PARTS INFORMATION

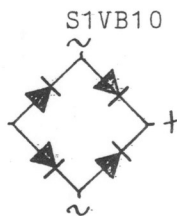
1, REC1



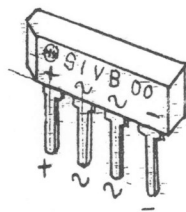
RECTIFIER STACKS DIODES



2, REC2



RECTIFIER STACKS DIODES



3, D1

ERB24-06C

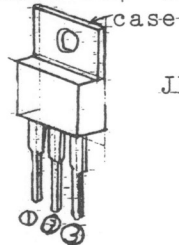
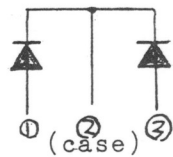


FAST RECOVERY DIODES



4, D6,7

ESAC85-009 , ESAC82-004 SCHOTTKY BARRIER DIODES

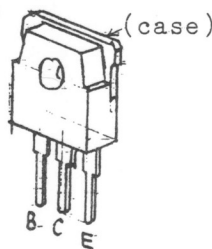
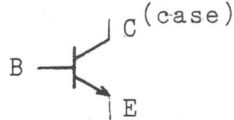


JEDEC : TO-220AB

5, Q1

2SC2625

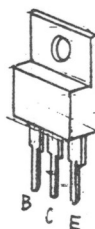
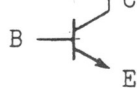
POWER TRANSISTOR



6, Q3

2SC2334 (case)

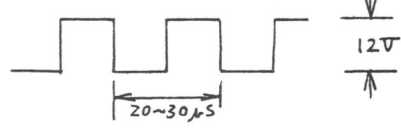
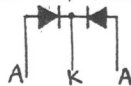
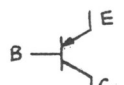
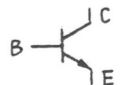
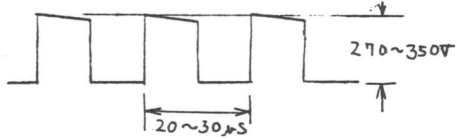
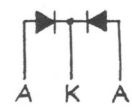
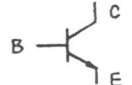
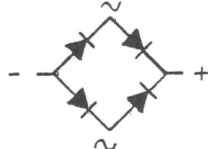
POWER TRANSISTOR  
C (case)



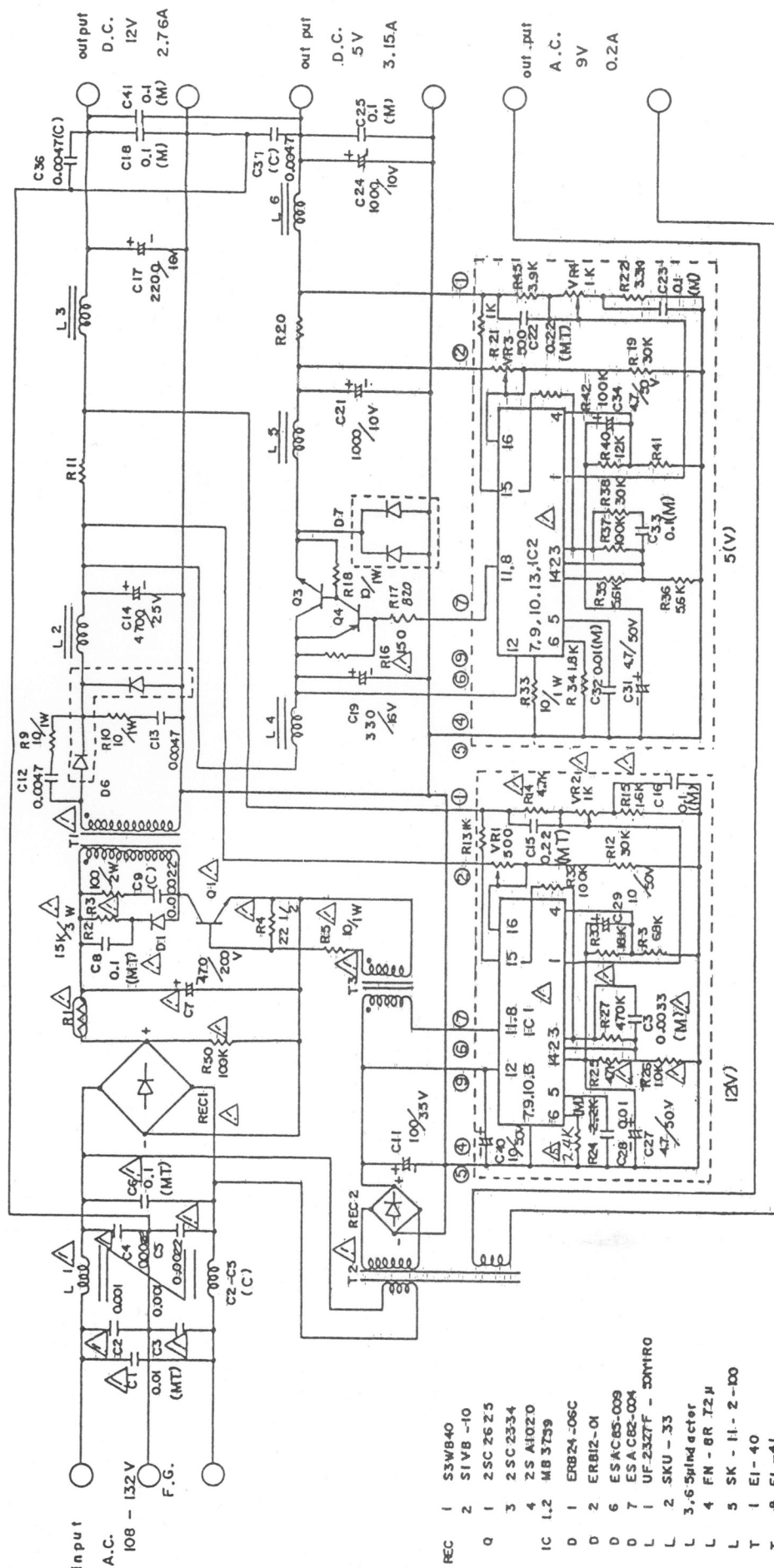
JEDEC : TO-220AB

# TROUBLESHOOTING GUIDE

| TROUBLE                           | CHECK POINT                    | CAUSES AND TEST                                                                                                                                               | SOLUTION                         |
|-----------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| NO OUTPUT                         | SOME SCRAP INSIDS              | SHORT CIRCUIT BIY SCRAP <u>YES</u>                                                                                                                            | CLEANING                         |
| NO AC 9V OUTPUT                   | SUPPLEMENTARY CIRCUIT          | T2 TRANSFORMER SHORT OR OPEN <u>YES</u><br>T2 PRIMARY LEAD WHITE TO WHITE 160~200Ω<br>SECONDARY LEAD RED TO RED 9~12Ω<br>SECONDARY LEAD BLUE TO BLUE 3.2~3.7Ω | CHANGE T2                        |
| IN CASE OF REC1 SHORT FUSE IS CUT | CHECK BRIDGH DIODE             | REC2 S1VB-10 DIODE<br>RECTIFIED VOLTAGE DC 12~15V<br>REC1 S3WB40 SHORT OR OPEN <u>YES</u>                                                                     | CHANGE REC1                      |
| IN CASE OF Q1 SHORT FUSE IS CUT   | CHECK SWITCHING TRANSISTOR     | Q1 2SC2625 SHORT OR OPEN <u>YES</u>                                                                                                                           | CHANGE Q1                        |
|                                   | CHECK HIGH-SPEED RECTIFY DIODE | D6 ESAC85-009 SHORT OR OPEN <u>YES</u>                                                                                                                        | CHANGE D6                        |
| 12V CONTROL CIRCUIT               |                                | CHECK BETWEEN COLLECTOR AND EMITTER OF 2SC2625 IN Q1 BY SYNCHRO-SCOPE                                                                                         | NO CHANGE A BOARD OF 12V CONTROL |
|                                   |                                | 12V OUTPUT ADJUSTMENT SHIFT <u>YES</u>                                                                                                                        | RE-ALIGNMENT                     |
| 5V output ONLY NO OUTPUT          | CHECK SWITCHING TRANSISTOR     | Q3 2SC2334 SHORT OR OPEN <u>YES</u>                                                                                                                           | CHANGE Q3                        |
|                                   | CHECK DRIVE TRANSISTOR         | Q4 2SA1020-0orY SHORT OR OPEN <u>YES</u>                                                                                                                      | CHANGE Q4                        |
|                                   | CHECK HIGH-SPEED RECTIFY DIODE | D7 ESAC82-004 SHORT OR OPEN <u>YES</u>                                                                                                                        | CHANGE D7                        |
| 5V CONTROL CIRCUIT                |                                | CHEC BETWEEN EMITTER OF 2SC2334 AND GRUND IN Q4 BY SYNCHRO-SOOPE                                                                                              | NO CHANGE A BOARD OF 5V CONTROL  |
|                                   |                                | 5V OUTPUT ADJUSTMENT SHIFT <u>YES</u>                                                                                                                         | RE-ALIGNMENT                     |



# POWER SUPPLY #250623 SCHEMATIC DIAGRAM



CAPACITOR

(M) POLYESTER FILM CAPACITOR

(MET) METALLIZED POLYESTER FILM CAPACITOR

(C) CERAMIC CAPACITOR

## NOTE

ALL CAPACITANCE ARE IN MICROFARADS.

ALL RESISTANCE VALUES ARE IN OHMS  
UNLESS OTHERWISE SPECIFIED IN THE DIAGRAM.

**△ CRITICAL COMPONENT**



